



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

MYCOLOGIA

VOL. V

MAY, 1913

No. 3

ILLUSTRATIONS OF FUNGI—XIV

WILLIAM A. MURRILL

The accompanying plate represents the two most poisonous species of fungi in this region, commonly known as *Amanita phalloides* and *Amanita muscaria*. Certain related species are also represented.

For a discussion of the principal species of this genus occurring in eastern North America, see MYCOLOGIA for March, 1913. The poisonous species of this group are discussed in MYCOLOGIA for November, 1910.

Venenarius phalloides (Fries) Murrill

Amanita phalloides Fries

DEADLY AMANITA. DESTROYING ANGEL

Plate 87. Figure 1. $\times 1$

Pileus convex or campanulate to expanded, 3–15 cm. broad; surface smooth, slightly viscid when moist, glabrous or decorated with scattered patches of the volva, varying in color from pure-white to yellow, yellowish-green, green, gray, brown, or blackish, margin rarely striate; context extremely poisonous, white, not objectionable to the taste but having at times a somewhat disagreeable odor; lamellae white, unchanging, broad, ventricose, rounded at the base and free or adnexed; spores globose, smooth, hyaline, $7-10\mu$; stipe subequal, bulbous, long, smooth or floccose-scaly, usually white, stuffed or hollow, 6–15 cm. long, 0.5–1.5 cm. thick; annulus superior, membranous, thin, ample, persistent or at times becoming torn away, usually white; volva white, adnate

[MYCOLOGIA for March, 1913 (5: 45–92), was issued March 10, 1913]



ILLUSTRATIONS OF FUNGI

to the base of the large, rounded bulb, the limb usually free, conspicuous, lobed, thick and fleshy, persistent, but at times breaking partly or wholly into irregular patches that are either carried up on the surface of the pileus or remain at the base of the stipe.

This most deadly species of all the fleshy fungi has been often described at length. The reader is referred to MYCOLOGIA for November, 1909, for a discussion of its poisonous properties. The variety of colors assumed by this species—white, yellow, green, gray, brown, blackish—and the fact that the annulus and the limb of the volva may sometimes be lost make it necessary to use great caution in selecting any white-gilled species with bulbous stipe for food, whether an annulus is present or not. All species of *Venenarius* and *Vaginata*, and several species of *Lepiota* must be examined with great care.

Vaginata agglutinata (Berk. & Curt.) O. Kuntze

Amanitopsis volvata (Peck) Sacc.

LARGE-SHEATHED VAGINATA

Plate 87. Figure 2. $\times 1$

Pileus hemispheric to plane, sometimes slightly depressed, very variable in size, 2–8 cm. broad; surface dull-white or yellowish, rarely reddish-brown at the center or entirely reddish-brown, pulverulent, floccose-squamose, or with large volval patches; lamellae free, rounded behind, broad, crowded, white; spores ellipsoid, smooth, hyaline, $10\text{--}12 \times 6\text{--}7 \mu$; stipe very variable in size, 1–7 cm. long, 3–8 mm. thick, equal or tapering upward, enlarged at the base, whitish, minutely floccose-squamose, stuffed or solid; volva unusually large, firm, membranous, persistent, more or less lobed.

Venenarius muscarius (L.) Earle

Amanita muscaria (L.) Pers.

FLY AMANITA. FLY AGARIC. FLY POISON

Plate 87. Figure 3. $\times 1$

Pileus globose to convex, at length nearly plane, 8–20 cm. broad; surface slightly viscid when fresh, red or orange to yellow, rarely paler, adorned with numerous whitish or yellowish warts, margin slightly striate; context white, yellow under the pellicle, extremely poisonous; lamellae white, rarely pale-yellow-

ish, rather broad; reaching the stipe and forming slight decurrent lines upon it; spores subglobose to ellipsoid, $9-10 \times 7-8 \mu$; stipe subequal, white or pale-yellowish, stuffed or hollow, usually rough with concentric, margined scales adnate to the bulbous base, 8-25 cm. long, 2-3 cm. thick; annulus superior, large, membranous, persistent, white; volva white or yellowish, usually entirely fragile, rarely slightly margining the bulb.

This widely distributed and very dangerous species has several color forms, and it has often been confused with edible species. Its poisonous properties and the use of atropine as an antidote have been considered in previous papers.

Venenarius flavorubescens (Atk.) Murrill

Amanita flavorubescens Atk.

VELVET-STEMMED AMANITA

Plate 87. Figures 4 and 7. $\times 1$

Pileus convex to expanded, scattered or gregarious, sometimes subcespitose, 6-10 cm. broad; surface flavous with a melleous tint to dark-brownish-melleous, usually darker at the center, adorned with yellow or brownish-yellow, floccose patches which may persist or partly disappear with age, margin faintly striate, usually paler; context thin, yellowish; lamellae free to adnexed, not crowded, oblong-elliptic in outline, white, much resembling those of *V. rubens* when dry; spores globose to ellipsoid, smooth, hyaline, $8-10 \times 5-8 \mu$; stipe subequal or tapering upward, usually somewhat enlarged below, but scarcely bulbous, fibrillose or floccose-mealy, at times conspicuously roughened, characteristically tomentose when dry, concolorous or paler above, reddish below, turning slowly to red at the base when bruised, 5-12 cm. long, 5-12 mm. thick; annulus ample, membranous, persistent, flavous; volva flavous or nearly so, friable, the fragments remaining on the surface of the pileus and at the base of the stipe or disappearing according to weather conditions.

The two figures show striking differences in color and form, but the species is a variable one. Figure 4 represents the dark form; figure 7 the normal yellow form with an unusually rough stipe.

Venenarius Frostianus (Peck) Murrill*Amanita Frostiana* Peck

FROST'S AMANITA

Plate 87. Figure 5. $\times 1$

Pileus thin, convex to expanded, plane or slightly umbonate, 3–8 cm. broad; surface viscid, adorned with floccose, yellow fragments of the volva, often becoming entirely glabrous, chrome-yellow to orange-yellow, slightly darker in the center, margin smooth or slightly striate; lamellae free, rounded at both ends, subdistant, white or yellowish; spores globose or ovoid, smooth, hyaline, $6\text{--}10\mu$ long; stipe slightly tapering upward from the bulbous base, white or yellowish, smooth, flocculose, stuffed, 6–13 cm. long, 0.4–1.5 cm. thick; annulus membranous, delicate, easily torn away, pale-yellow to chrome-yellow; volva yellowish, usually entirely friable, rarely slightly margining the bulb.

A beautiful species resembling *V. muscarius*, but smaller and more slender and not poisonous.

Venenarius cothurnatus (Atk.) Murrill*Amanita cothurnata* Atk.

BOOTED AMANITA

Plate 87. Figure 6. $\times 1$

Pileus globose to convex, at length expanded, 3–7 cm. broad; surface quite viscid when moist, decorated with small, scattered, soft, floccose warts, white or tinged with lemon-yellow, or with the center tawny-olive, even or finely striate on the margin; context white, without odor; lamellae rounded behind, crowded, plane, white; spores globose, smooth, hyaline, $7\text{--}9\mu$; stipe cylindric, bulbous, flocculose or floccose-scaly, white, hollow or rarely stuffed, 5–12 cm. long, 0.4–1 cm. thick; annulus white, thick, persistent, volva white, adnate to the large, ovoid bulb, circumscissile, breaking uniformly and leaving an abrupt ring at the top of the bulb.

The annulus was very low in the specimen figured and the boot very short. The pileus was also less viscid and somewhat different in color from plants found commonly farther south.

NEW YORK BOTANICAL GARDEN.